Gen Jumper speaking on VTC from Hurlburt Field.

Media day for Pentagon Media. Held in Theater Battle Arena (4C1061)

7 September 2000, 1100EDT

SUBJECT: JEFX 2000

GEN JUMPER: I'd like to welcome you all today to Joint Expeditionary Force Experiment 2000. I see many familiar faces in the crowd there. I won't attempt to embellish any of that great technical stuff you just got briefed on, but I would like to give you some perspective from the level of the commander.

What we try to do with these EFX's over the last three years, is to look forward to the next steps that we need to take. Especially as we attempt to integrate there our aerospace forces. Our forces that are airborne -- that are spaceborne, to include our intelligence, our reconnaissance and our surveillance assets…our special operators.

Our information warfare capabilities are emerging along with the capabilities of our unmanned air vehicles and the joint weapons that are being developed to give us greater range and greater standoff.

We did this not only in the context of the conventional major theater contingencies on which our strategy is based. But also in recognition of our…of the emerging patterns of war that we're seeing in confrontations like Kosovo, where collateral damage and rules of engagement become more and more of a factor in the way that we prosecute the war.

So quite simply what we're trying to do is to get that horizontal integration of our shooters, our intelligence, our reconnaissance, and our surveillance assets to decrease the timeline from target discovery to target destruction. And also to bring the way that we think about it in line with the way things are happening to include humanitarian relief operations. And as you all will recall, the many tens of thousands of refugees that we dealt with in the Kosovo crisis. The way that we think about it from a command and control point is that those refugees we had to target with food and the means of survival for them are just as precisely as we targeted laser weapons. It's done with the same command and control process, the same precision that we prosecute any target, if you will.

In short then, what we are focusing on here is the notion of agile combat support. How we keep in-flight visibility with regard to large volumes of assets that are transiting the ocean. That's one of our focus areas. The other main focus area here is time critical targeting. And that is closing that loop of fine, fixed-tracked targeting engage and assess,

down to minutes instead of hours by this process of horizontal integration that I talked about before.

The way we do this is to try and marry our processes with the technology… the technology is out there in industry today. The technology… the information technology is open-ended databases. It's the easy manipulation and access of data. It's passing it to the right place at the right time (which is what you saw on the chart about the joint battle space infosphere) -- sometimes called the "global grid" -- it all means the same thing. It's that battle space Internet idea where you are Web-based. You have easy and free access to the data that you need. And you are able to pass that on to recipients wherever they need it, at any time.

This is what we try to do here. We try to discover those pieces of software and hardware that will allow us to do this. We invite the industry in, on their own nickel, to demonstrate where this technology is and how it applies and we take those best ideas, those best of breed and try to transition those into what's useful for our command and control.

That's what we're trying to do and from a commander's point of view I can tell you that after Desert Storm we did a great job of writing down our lessons learned. I think all the Air Force senior leadership would agree with me that we didn't do all we could have or should have to act on those lessons learned. After Kosovo, we have also a great deal of lessons learned. Many of them are the same that we learned from Desert Storm.

My commitment is to make sure that we do something about those lessons learned this time around.

So, I'll let that end my formal remarks and I'll be glad to take any questions that you all have.

Q1: Gen Jumper, this is Pam Hess with United Press International. I want to pick up where you left off on the lessons learned. Was there anything that you saw with regard to time-critical targeting in Kosovo that you'll be addressing in EFX 2000? Or were there any innovations that your teams did in Kosovo that you're going to be exercising again?

Gen Jumper: Well, yes, ma'am. As you may recall, during prosecution of the Kosovo crisis, we put in place a time-critical targeting element down there that consisted of a great team of Army and AF operators and targeteers that worked very hard, with the cooperation of the intelligence folks, to put together this intelligence surveillance and reconnaissance information in a timely fashion so that we could get to those targets as they emerged.

Now, the weather and many other factors play a part in this. But what we did was work out what we think is the right process. But we did it without the benefit of the software and the information processing that we need to really make it quick. I think we can get this down to single digit minutes. When we think of targets that emerge on the

battlefield much like we think about targets that we see on a radarscope at an F-15. If you're sitting in the cockpit of an F-15 and you see a target on your radar screen, you lock on to that target and within seconds, you have everything that the technology of that airplane can tell you about that target: its altitude, its heading, its airspeed, its closing velocity. It takes that information, it processes it and it passes it on to your air-to-air missile and presents the shy envelope in a way that you now are able to make an instant decision about whether to shoot or not.

My simple question to my staff and to our command and control people is, "why can't we do that with an operationalized picture of the battle space for emerging targets in the air-to-ground world, as well?" That's what our goal is. That's what we're trying to do. That's what we learned in Kosovo. That's what I'm trying to operationalize here with a whole lot of help from the folks that you were briefed on earlier.

Q2. General, it's John Tirpak at Air Force Magazine. In this experiment, have you been able to do single-digit minutes? From detecting the target to shooting it and is this something you think will be applicable in the very near-term? Or two, three years out…five years out? Give us an idea of the implementation.

Gen Jumper. John, I think the answer to your question is: sometimes we do and sometimes we don't. It's the nature of experimentation that some things work better than others. But we…to the best of our ability to do this horizontal integration that I'm talking about; when I talk about that, what I'm talking about is the platforms that do the signals intelligence--that do the imagery intelligence. That can take the real fine picture and make it available to you right now. The Joint Stars, which does the moving target indicator -- you combine that with your _____ assets that have a unique glimpse of the battle space and you put those things together. You not only have confirmation of what you have on the ground but you have a very precise way to do target location, as well.

But you have to mechanize it so that those platforms can freely share their information and narrow down not only what you're looking at, but where it is. And then you have to, for those really tough rules of engagement and collateral damage requirements, you have to have that predator unmanned air vehicle or that U-2 or that satellite ready to take that picture where you can confirm beyond the shadow of a doubt that what you see is what you think it is. And that it is far enough away from friendlies that you are not going to experience collateral damage.

Now right now, as you know, the extent that we have to depend on a predator or a U 2 to give us that information…sometimes it's not exactly in the right place. So that's going to be your limiting factor. The question is then, "What can we do to reduce that _____ in your kill chain? Those are the things we're working on. So success can come in single-digit minutes and can come very easily if everything is in place right now. If thing are not in place, then you're suffering a little bit longer, but it's _____ a magnitude better than we were able to do it before when we didn't have those assets that were talking to one another.

We are… a lot of this stuff is still experimental. I would say that if we were able to put together in a very few number of years (I'm talking three or four) the ability to get ourselves down to a very rapid targeting. Not a hundred percent of the time, but certainly much better than we're able to do today. That's our goal. That's what we're working on. And we have the tools to include the displays that we put up in the air operations center so that the joint force air component commander and his staff can essentially lock on to the target just like I described we locked on the air-to-air target. And get that information quickly so that you can make a decision. You know what decisions you have to go higher for, if it's a collateral damage issue or a rules of engagement issue. Or you know that, based on the priorities the joint forces commander has given you, you're free to go ahead and attack that. An example of that would be a scud missile that you thought was going to fire in short order and the CINC had sort of given blanket [stealth?] clearance to hit that sort of a target. Those are the examples we work on today. That's what we tried to do in Kosovo. And I think we a very few years off of being able to do much better with what we've got especially when you include the integration of air and space assets. Taking full advantage of our space assets. And then… we are looking at ways now to even point the way toward greater cooperation through data links and this joint battle space infosphere that we… you were briefed on earlier.

Q2a. So the principle tool you're us[ing]…experimenting with then is the software and the CAOC that merges this information…?

Gen Jumper: Software and hardware and tons of datalinks and messages and the techniques that you use to prioritize those datalink messages. How you manage that datalink message traffic in the air from platform to platform--this is all complicated stuff that needs coordination and prioritization. There's also bandwidth issues when you talk about space platforms and how you relay these items of information that may need further analysis very quickly back to a reachback positions in the United States. For instance, you think you have found a surface-to-air missile site on the ground, you get a U-2 quickly to take a picture of it, but they are doing the analysis at Beale Air Force Base in Northern California to tell you whether what you think you have is what you really have or not, and then shooting it back. So now bandwidth becomes an issue. It all has to fit together in order to be able to do this very rapid reaction sort of targeting that we have seen emerge throughout the decade of the 90s that many of us believe will characterize warfare into this century.

Q3: Frank Wolfe at Defense Daily, general. Just wanted to ask again, on the same topic of Time Critical Targeting, are their any particular pieces of software or anything that you have seen that offers the greatest amount of hope to you in terms to getting it down to single digits minutes….are there any particular things that you have seen in terms of software….

Gen Jumper. Well yeah, I have seen lots of stuff that will be very helpful to us, one of them is one that our folks invented right at Rome Labs in NY, our own development laboratory, we call it Data Wall, and it is this, this display that I told you about that is going to be able link the picture of that battle space, you essentially put your cursor, we

call it the lock-on bean, like we have on the F-15, over a geographic area and when you active it, it begins to call in data, all the data is available that is available for that particular location whether it is a SCUD missile or a whatever might be that emerging target. Now we are not there yet, we are working on this Data Wall to get us there, but we have a vision on where we want to go. We have the F-15 analysis that we are working on, and we have the Data Wall and the things that it is able to present right now up with the sort of fidelity we need to make that sort of thing happen. Now what we have to do is work with the web basing, the attachments to the databases that are required, and the portable process, much like we see in today's information, internet, work spaces, that portal us to the information pieces that you have to have to make your decisions. We are talking about decision quality information is the buzzword we use to be able to make that rapid decision. So, software is a piece of it, hardware in the form of displays is another piece of it. Yet another is the way we traditionally think of our deployable Air Operations Centers. Now we, as you know, when we deploy a AOC, it takes about a dozen C-141 equivalents to put all of the stuff on there that it takes to setup the tent city and all of the displays and servers that goes into it. When you walk into one of these places, it is impressive, but there you are with workstations in a tent environment. Unless any of you are much better in communicating with computers than I am, I can tell you that sand, water and computers don't mix very well. We're trying to get to the idea of a deployable AOC where you put your lap-top under your arm, you get on a commercial airplane, and you deploy to that place in the world where you already have some infrastructure already set up. Many of probably seen it before, you sit down at a table, you put your infra-red devises around the ceiling that can see all of the computers, and your instantly networked, you instantly have the displays, you have the large servers compacted down to one box, which is doable today. And essentially, you have a deployable AOC in the coach class of a Delta Airlines airplane going across the ocean somewhere. All you need is a building and a small satellite piece of communication to get yourself started and reach back to operations in the United States where the large data bases reside and are manipulated and you are taking advantage of things that already exist somewhere instead of figure out how to deploy all of that stuff forward. Now, there are limitations to that which we have to work out, but we are big on getting the concept of operations right before we decide on anything, but these are the changes that you're going to see coming down the road in the air operations business very soon. My goal is to reduce, by at least half, perhaps more, the number of people it takes to operate that large forward air operations.

Q4. Gen. Jumper, this is Christian Lowe from Defense Week, you guys are operating your exercise, your experiment, under the umbrella of Millennium Challenge 2000. This is the first time this has occurred. Can you comment a little bit on how well that is going, specifically, in working with the other services all sort of coming together to do the same thing.

Gen. Jumper: Yeah, Christian we have of course in the AOC it is a joint AOC by definition, so we have all services represented here on the floor in the AOC just as we did in Kosovo, just as we did in Desert Storm as the normal course of doing business. Our integration with Joint Forces Command is something we have put into this particular

exercise so that we can be more realistic in the short notice taskings we get from the CINC. That is the major play that we have asked them to help us with in this particular exercise. So during the course of the exercise, especially the live-fly part next week, we will get from them short notice taskings from a common intelligence database, they decide instantly if they want to change the CINC's priorities around that deal with this emerging target that pop ups. They'll will give us those tasks, then we will be measuring ourselves on how quickly we can respond to those and seeing how we will be putting together some of the things I have been describing to you this morning.

Q4a. Have you done a run-though of that kind of quick turnaround of information, and how well has that worked?

Gen. Jumper. Yes, we have done a synthetic run through, we did one yesterday, and quite frankly, I haven't gotten the debrief on it yet today. I know the input process went OK, I can't tell you how well we did, but I can get back to you on that because what we are doing, in a matter of fact, we are doing some analysis on that this morning. The procedures are there, whether the pieces of equipment and links and nodes latched together the way they were supposed to do, I can't confirm all that for you right this minute.

Q5. Yes, "hi, sir," this is George Seffers, Federal Computer Week. To what extent or do you have an opposing force attacking these systems with either information warfare techniques or electronic warfare techniques testing the security of the system?

Gen Jumper: Yes, we have _____ that is going on that looks at the vulnerability of our systems. We are not actively attacking it because by the very nature of experimentation, some of these things are fragile by definition. Some of them actually operate outside the network because they could affect the stability of the rest of the network. Until we decide that we like them, we haven't invested in making the full compliance; the full certifications to make them fully integrated into the system. So, while we're doing assessments on how vulnerable we are in our normal Theater Battle Management corps systems, we have not gone about trying to attack our systems in a way that… because we know it's so fragile. As a matter of fact, we suffered a power failure yesterday afternoon that we're working our way through, through the night. As I say, because of the nature of experimentations. The thing you don't get in an experiment like this is the battle rhythm that _____ used to, for instance, in the Kosovo crisis. You get the rhythm going, you get the tempo of the air tasking order coming out. There's a certain rhythm that gets your head into the battle and allows you to anticipate a lot better. In experimentation, you have things that don't work like you expected them to. You have things that work better than you expected them to. You want to be able to reset and do this again to make sure that if it was as good as you saw it the first time, it was going to be as good as you saw it the second time. Or, if this thing you expected to really be good didn't pan out, "what went wrong?" Give them a chance to explain it to you; to work the problem. So you don't overlook something important along the way. So, that sort of experimentation doesn't… it's different than an exercise when you want that red

team outside the fence trying to get in and show you what your vulnerabilities are. We're doing that in some things, but not as robustly as we would in a full-up exercise.

Q6. Gen Jumper, this is Linda DeFrance with Aerospace Daily. I wanted to know if you could speak a little bit about the precision engagement piece; the exercise piece in Korea. I think it's [olchee focus lens ??]. And if that is complete and if you've already done a hotwash on what was learned there; how that fits into this larger exercise.

Gen Jumper: Linda, the [olchee focus lens ??] exercise is one that takes place in August and it's focused on the Pacific environment. What we do from Air Combat Command is send large numbers of _____ over there, just as we would in a real Korean scenario. And as you know, that's one of our major theater war scenarios to augment that force. They will do an analysis that takes months and I do not think that their final analysis is out yet. But they have a very well practiced routine over there to deal with their situation. They also have a fixed-air operation center. And they have a fairly fixed scenario and through their intelligence have ways of predicting what's going to happen fairly well over there. A little bit different than what we're trying to do here with working the unknown rules of engagement and collateral damage things that pop up and emerge. While we augment them and we have a lot of the players from [olchee focus lens ??].that are here in this operation so there's a lot of information shared. Our scenarios for this particular experiment cross over only in that you find critical targeting will be important to them, agile combat support and the changes and improvements we make will be important to them, but the scenario is not exactly like the scenario they fight over there. And the agility we are looking for some our pieces of software and hardware are more towards the deployable AOC than the fixed AOC. Still, the skills out on the floor and the people are the same people.

Q7. General, this is Bruce Ralfsen from Air Force Times, I know we have been talking hardware here a lot. Will this experiment change at all how you go about how manning the AOC, for example, if you have a permanent deployable air operations squadron which you would draw people from for contingencies.

Gen. Jumper. Well, Bruce you hit on an important point. One of the fundamental questions is how many AOC do you really need in today's environment. That is one of the questions that we are wrestling with, not necessary the heart of this experiment, but as an overall issue. What we hope to get out of this experiment however is a way to _____ how we think about the AOC. You may have heard and read discussions about the AOC weapons system. This is the way we are starting to think about our AOC so that we can define very specifically, crew positions like you would define a crew position on a large aircraft. Say like a Rivet Joint, AWACS or a Joint Stars. Crew positions that are certified, they take check rides, they have events they have to accomplish every training. And there is a formal training program that goes along with it. Right now, we are mainly augmenties. People that are aerospace savvy, but they come in and are trained on the spur of the moment, if not the course of combat, as we saw in several cases in Kosovo, and is generally a pick up team. We want to formalize this in a way that reduces, and I mean drastically reduces the number of people it takes to populate a AOC. We think we

do this by crew positions, we think we do this by thinking about the AOC, the way we think about airplanes, with disciplined vocabulary, check rides, certifications, to take the skills of our AOC and put them into a more warrior context.

Q7a. When you are talking about reducing the manpower in the AOC, are you just talking about the folks that deploy, but the overall the force involved in the center?

Gen. Jumper. We would like to start of by reducing the requirement of the force that you have to deploy. Sort of the concept I described early….the laptop under the arm concept. It takes advantage of planing functions that goes on back at the states that are large data bases and large capabilities that exist in permanent locations that where you have this virtual connection and you can take advantage of those of planning function from afar without having to deploy them forward. It is a distributed look at how you do your business today, and taking advantage of reach back communications to be able to manipulate the databases rather than deploy them forward and large pieces of equipment that go with it. Now how far can we go with this? We have be very careful, and that is whey I am not going to give you number of how much we can reduce. I will go so far to say I think it is a very significant number of highly trained, highly proficient people using software that is user friendly, web-based and takes full advantage of that information technology that are out there in U.S. industry today.

Q8. Sir, SSgt. Bosker with Air Force On Line News. EFX 98 focuses on moving information while deploying fewer people to the front lines. We saw that in Kosovo. How long will it take most AF people to see the effects of JEFX 2000 come into play?

Gen. Jumper. Well, the idea EFX 98 was to have en-route capabilities and certainly to use reachback capabilities and distributive network stuff, that puts on your screen work places no matter where they exist on the globe. And you can talk to people just like they were sitting next to you. We are using that today in JEFX 2000. We have not seen a wide distribution of this type of technology yet because quite frankly, it hasn't matured to the point that we can deal with all levels of _____we need, and it has been very difficult for us to work to exactly who do away at forward AOC. These are things that we continue to deal with and continue to have to discuss, but we cant to that until we have the software and the precision quality information I was talking about early that allows people to make those decisions. As long as we have information process that require interpretation by human beings and questions to be asked before you can get to the final answers, it is going to take lots of people to do that, and lots of people on the floor of the AOC. So in some cases, the technology is….we are still working with the technology and other cases, we are just not there with the software packages yet to give us that decision quality information. This is all of the work in progress that we continue to iterate in our EFXs.

Moderator. We are right at a half-hour, we have time for a couple more questions.

Q9. General, Linda Defrance from Aerospace Daily again. I know down at Norfolk (NAS) the Navy piece has an asset from the UK and a ship from the UK and sent NATO observers. Are there NATO players in this or observer in the Air Force piece of this.

Gen. Jumper. We do not have the allies playing in this exercise and it is a bit of a disappointment. We were not able to get around some of the classification problems that we had, so that we can invite our allies. We needed to get into some very declassified stuff with regard to information technologies and other technologies out there in a way, that … the state of that technological development right now, we are just not able to share some of those technologies. I would rather not have them here on the floor where we have to invite them to leave for certain portions of the experiment which I think is more embarrassing than just asking them to understand our situation and to continually work the problem. I hope by the next JEFX, we'll be able to find ways to protect our dearest secrets and still have our allies participating with us in this experiment. It was a source of severe disappointment, personal disappointment to me that we couldn't make that happen this time. I am dedicated to making it happen next time.

Q10. Gen. Jumper, it is Christian Lowe again from Defense Week. We saw a slide from the presentation here that you guys were using live assets for this experiment. Are you using any simulated assets that may come on line in the future, like F-22s or other munitions that you don't yet have to put your hands on, but you may have in sort of a computer notional way.

Gen. Jumper. Yes, we are using the Joint Strike Fighter and the joint weapons that go along with the JSF and I think with the bombers….(off screen) Are we using any of the joint weapons with the bombers….yeah, so there are new joint series of weapons we are using and we are for sure using the JSF in the exercise which gives us a great deal more flexibility that we had for instance in Kosovo. As you know, the new joint series of weapons will give us an all weather capability that we struggled with a bit there in Kosovo, especially in regard to trying to get _____ forces early on when the weather was so very bad. We put the joint weapons in there and the JSF, it helps you very much in that sort of situation. We try not to give ourselves too much of a virtual edge if you will, so that we have to work these problems, and make the software and hardware challenge us to get the decisions and to get the assets sent down to the to most difficult situations. We will see more of that next week in the live-fly scenarios than we have in the work up this week.

Q11. Gen. Jumper, John Tirpac (Air Force Magazine) again. Other than the time critical targeting, were there any urgent lessons from Kosovo, that you're urgently trying to experiment with and find a quick solution to?

Gen. Jumper. John, there is a whole list of things that I brought back with me from that situation. Number one on that list is the command and control piece. We have….I can go down the list of weapons that I think we will want to see as early as we possible can. Those joint series of weapons we have put emphasis on, as a matter fact, we see used in OPERATION SOUTHERN WATCH, even today, the value of stealth, I think once again

proved itself which points out the importance of the F-22 and the JSF. I was consumed with worry during Kosovo about the introduction of the SA-10 or the latest generations of fighters could possibly found their way into Serbia and changed the whole dynamics of the war. We continue to deal with ways to work that problem and that gets to some of the very classified things that prevented us from having the allies here this time. Working that particular problem, we look forward to the introduction to the F-22 and JSF to give us that first in capability to enable 24-hour stealth with the F-22 that will allow our B-2 bombers and our F-117s to operate 24-hours a day under the protection of the stealth fighter that can protect you into and out of the target. Those are the things that we brought back with us that were limitations and continue try to work from a tactics point of view, from the tactical and operational level of war as we look into the future. More than the time critical targeting piece of it, we have to worry also about how to deal with this collateral damage situation. The example of the tank between the two red roofed buildings in Kosovo. How do you deal with that problem? How do you do the intel preparations of the battle space to know that there aren't friendly people in those red roofed buildings? How can you be sure? How do you deal with the small tactical enemy units that roam around and hide themselves in the woods and their killing mechanisms against innocent civilians is nothing more than a side arm or a pistol. And when air power is challenged to go in and dig that sort of situation out and stop that sort of killing and we are asked to counter-attack essentially, how do we go about precisely locating those? We are working on those problems. We are not there today. Between the weather and the length of time it takes to prosecute some of our processes, it can be frustrating when things just don't fall together the way that you want them to. That is what Mike Short had to face as the Joint Forces Air Component Commander over in the Kosovo crisis. We are going to fix it, we are going to fix that.

Q12. Frank Wolfe, at Defense Daily again general. Just wanted to go back to your saying the allies you hope will participate the next time around. What will allow them, I mean what …. (cut off by Gen. Jumper)

Gen. Jumper. There are ways you protect the displays, ways you can build firewalls, and you can deal with the equipment and the classified things where you can still keep a professional and open atmosphere on the floor with out looking like you are excluding your partners and still protect your dearest secrets. We guess, quite frankly, when I came into the job in February, and we added some of these things into the scenario I've been talking to you about, quite frankly we just didn't have a chance to build those firewalls to make all of the people who are legitimately concerned with the protection of very valuable technologies and secrets that we have to make them comfortable with the fact that we can do this in a reasonable way. We just didn't have time to put it all together. I deeply regret that. We had a bunch of people that tried very hard and we came very close. But I do think the next time we do this, we are going be able to include our allies in the process.